



ABSTRACT

Background: YouTube is the second most commonly accessed website worldwide, but little is known about the accuracy of its medical content. We performed a review to analyze the type and quality of content in a YouTube search with respect to the treatment of psoriasis.

Methods: The first 10 result pages of YouTube were searched using the term *psoriasis treatment* with applied filters. One-hundred and eighty-two videos were reviewed and characterized by the source of content. **Results:** Of the identified videos, 7.1 percent had medical institutions or verified physicians as authors; 12.1 percent had a media-affiliated author; 1.6 percent were posted by a pharmaceutical company; 11.5 percent contained “miracle-type” product advertisements with included links to product purchase websites; and 69.2 percent were holistic in nature, describing “natural” supplements and diets necessary for adequate psoriasis treatment and cure. **Conclusion:** This review emphasizes the need for an increase in the online presence of medical institutions to augment the dissemination of correct health information.

KEYWORDS: Psoriasis, treatment, YouTube, awareness, social media

Psoriasis and the Digital Landscape: YouTube as an Information Source for Patients and Medical Professionals

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Psoriasis is a common, chronic, immune-mediated skin condition affecting approximately 7.4 million people in the United States.¹ Its effects and comorbidities can be severe in some patients, with treatments varying in effectiveness per individual, thereby significantly impacting patient quality of life on a daily basis.² For these patients, living with a chronic illness means a lifetime of self-learning from various sources such as their own experiences, medical professionals, other patients, and increasingly from digital sources that have become part of the common fabric of life.^{3,4} YouTube, an enormously popular and successful social media website with up to one billion active users per month,^{5,6} has previously been studied as a source of health information for a wide variety of diseases.^{7–9} Its popularity stems from its ease of access and its use as a platform for sharing individual struggles and successes among an affected virtual community. As the reach of social media continues to expand, in addition to being used as a source of psychological support, the site also has tremendous educational potential, particularly if used by physicians and medical institutions to address the treatment, comorbidities, and pathogenesis of a disease.¹⁰ Therefore, we sought to examine the platform for videos directed toward patients with psoriasis, specifically examining the content available via a search for “psoriasis treatment.”

METHODS

We performed YouTube searches between July 30, 2017 and August 4, 2017 using the search term *psoriasis treatment*. Analysis was restricted to the first 10 pages of results with English language and United States content location selected as filters. The restriction to the first 10 pages of results allowed us to maximize the quality of the search, as studies have shown that most searches culminate after the first page.^{7,11} The resulting videos were evaluated by a reviewer. Video characteristics such as the number of page views, number of years online, thumbs up and down ratings, author type, type of medical professional author, and language of the video were recorded. Videos were characterized by the source and quality of content (Table 1). Video authors claiming medical expertise were investigated via a brief internet search to establish credentials.

RESULTS

A search using the original search term, *psoriasis treatment* resulted in approximately 146,000 results. The first 10 pages (182 videos) were analyzed. Only 7.1 percent (13/182) of videos had medical institutions or verified physicians as authors, while 12.1 percent (22/182) had a news-source or media-affiliated author and 1.6 percent (3/182) were posted by a pharmaceutical company. The remaining 79.1 percent (144/182) were private posts

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TABLE 1. Example of data collection

VIDEO TITLE	NUMBER OF PAGE VIEWS	TIME ONLINE (YEARS)	TYPE OF VIDEO AUTHOR	RATING: THUMBS UP	RATING: THUMBS DOWN	TYPE OF MEDICAL PROFESSIONAL	NOTES
"Psoriasis treatment commercial: which you are you?"	73,428,964	1	Pharmaceutical	0	0	Unknown/unavailable	Ustekinumab commercial
"How to cure psoriasis naturally"	740,000	3	Private	6,300	486	Unknown/unavailable	"Natural" treatments: diet: no processed sugars
"Aloe vera psoriasis treatment"	406,842	6	Private	533	96	Unknown/unavailable	"Natural" treatments: grow your own aloe vera
"Causes and symptoms of psoriasis and how to treat psoriasis"	350,564	3	Private	690	97	MD	Basic overview of psoriasis symptoms and treatment options
"Psoriasis natural treatment that works"	326,400	4	private	1,850	86	Chiropractor (DC)	"Natural" treatments: avoid carbohydrates, fruit, nightshades, red meat
"How to cure scalp psoriasis naturally 3 years after shaving my head"	312,642	1	private	3,640	166	Unknown/unavailable	"Natural" treatments: apple cider vinegar, hemp seed oil; link to paypal account.
"6 foods to avoid for psoriasis"	298,900	1	private	840	205	Unknown/unavailable	"Natural" treatments: avoid sugar, alcohol, fried food
"Natural treatments for psoriasis"	275,700	1	private	3,232	123	Chiropractor (DC) & Doctor of Natural Medicine (DNM)	"Natural" treatments: supplements such as hydrochloric acid and pepsin, milk thistle, fish oil, dandelion
"Get rid of psoriasis"	198,748	0.08	private	3,000	263	Unknown/unavailable	"Natural" treatments: cow urine; not in English
"Psoriasis treatment"	190,201	4	private	1,289	13	Unknown/unavailable	"Natural" treatments; link to treatment site

Videos are sorted based on the number of page views. Criteria such as category of video author, duration of time online, video thumbs up and thumbs down, and type of medical professional posting the video were recorded. Additional short notes on video content were included.

from authors with no clear medical background. Regarding content, 11.5 percent (21/182) of videos contained "miracle-type" product advertisements with included links to product purchase websites, while 69.2 percent (126/182) of video content was holistic in nature, describing the "natural" supplements and diet necessary for adequate psoriasis treatment and cure. Interestingly, 12.6 percent (23/182) of videos were not in English, even with the selected English language filter.

Of the five most popular videos sorted by the number of views, only the first and fourth were medically affiliated, with the first video posted by a pharmaceutical company promoting treatment with biologics and the fourth video being a privately posted educational video featuring a dermatologist's explanation of psoriasis. The remainder of the videos concerned natural and homeopathic remedies for psoriasis (Table 1).

DISCUSSION

YouTube is one of the most popular major social networking sites and media sources, with its mobile access alone reaching more individuals in the 18 to 34 years and 18 to 49 years age ranges than any cable network in the United States.⁵ Its popularity is concomitant with the internet's evolution into a community to which users turn for information on how to manage health conditions.³ With YouTube's span including almost one-third of all people on the internet, it is crucial for healthcare providers to understand its effectiveness in providing health directions among users.⁵

Consistent with prior studies,⁷ our results show that the most highly viewed videos were those based on personal experience or those promoting natural health products rather than those posted by professional societies. In fact, our study shows that popular non-

peer-reviewed social media platforms are underpopulated by videos from professional organizations and, instead, that the majority of information available is of low quality and from individuals with unknown credentials. A large majority of the videos included in our analysis were misleading with claims of "natural cures" posted by "natural health specialists" with no accreditation. Prevalent themes among these videos included the avoidance of certain foods and the use of aloe vera and apple cider vinegar. Additionally, a majority of these videos contained advertisements for supplements and "miracle health plans" that could be purchased online. These unconventional videos garnered more "likes" and views than did traditional medical videos. All of the above contribute to an environment of medical misinformation and could lead to potentially negative and

dangerous health effects in vulnerable viewers.¹²

While some universities and professional dermatology organizations have posted lectures and informational videos online, evidence from prior research reveals that other potential sources of medically accurate information, such as academic journals, lag significantly behind.¹³ Other medical organizations should consider making institutional videos readily available for patients searching YouTube for medical advice and guidance.¹⁴ One possible way to expand the outreach of medically accurate information is through the addition of general medical informational material to the advertisements generated through healthcare marketing departments that often post videos highlighting hospital services. In an age where analysts recognize that online health information overload is a problem, even going so far as to characterize it as a “disease” in itself,⁴ viewership and patient reliance on social media for health care information will likely continue to rise.¹⁵ While these sites offer a potential channel for conversation between patients and healthcare providers, the field of medicine needs to take charge of its own media interface in order to better organize and extend its web presence.^{13,15}

Limitations. This was a cross-sectional study that presents only a snapshot view of the information available on YouTube. YouTube content might shift over time, and the use of different filters might produce very different results. Additionally, only the first 10 pages of videos on YouTube were analyzed. This criterion was chosen as it was reasoned that most YouTube viewers do not scroll through excess videos due to time constraints and ease of availability. Finally, this study was limited

to a direct YouTube search and was not able to account for YouTube videos viewed on other sites that link videos.

CONCLUSION

Our study contributes to evidence from current studies revealing the relative absence of medical sources, specifically of dermatologic organizations, in the world of social media. When searching YouTube for videos concerning the treatment of psoriasis, patients are faced with a wide variety of information, with most of the content, unfortunately, being of low quality. While the internet and social media platforms have the potential to improve patient education, physicians and academic institutions must also recognize the potential influence of incorrect information. This review emphasizes the need for an increase in evidence-based, peer-reviewed videos addressing the treatment of psoriasis that are easily accessible for patients.

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